

CLAIMS:

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1. A lighting device with an optical waveguide plate (1) which comprises a light emission surface (11) and a plurality of channels (20) each for accommodating at least one substantially linear light source (21), characterized in that said channels (20) are covered with a first reflecting layer (204) at their upper sides (203) facing the light emission surface (11), and the coupling of the light into the optical waveguide plate (1) takes place through side walls (201, 202) of the channels.

10 2. A lighting device as claimed in claim 1, characterized in that the side walls (201, 202) of the channels (20) extend substantially perpendicularly to the light emission surface (11), and the upper sides (203) of the channels (20) extend substantially parallel to the light emission surface (11).

15 3. A lighting device as claimed in claim 1, characterized in that the channels (20) are covered with a second reflecting layer (121; 121a) at their lower sides opposite to the upper sides (203).

20 4. A lighting device as claimed in claim 1, characterized in that the channels (20) have a substantially rectangular cross-section.

25 5. A lighting device as claimed in claim 1, characterized in that the channels (20) are embedded in a lower side (12) of the optical waveguide plate (1) opposed to the light emission surface (11).

6. A lighting device as claimed in claim 1, characterized in that the optical waveguide plate (1) comprises a plurality of optical waveguide elements (2) in which the channels (20) are provided and which are optically fixedly connected to the lower side (12) of the optical waveguide plate (1) opposite to the light emission surface (11).

7. A lighting device as claimed in claim 1, characterized in that the at least one light source (21) is a low-pressure gas discharge lamp.

8. A lighting device as claimed in claim 3, characterized in that the second reflecting layer (121) extends over the lateral surfaces (13 to 16) and the lower side (12) of the optical waveguide plate (1).

9. A lighting device as claimed in claim 8, characterized in that the second reflecting layer (121) has a spacing forming an air gap from the optical waveguide plate (1).

10 10. A lighting device as claimed in claim 1, characterized in that the first reflecting layer (204) has a continuation in the form of a first portion (204a) extending in horizontal direction into the optical waveguide plate (1).

15 11. A lighting device as claimed in claim 1, characterized in that the first reflecting layer (204) has a continuation in the form of a second portion (204b) extending along the side walls (201) of the channels (20).

20 12. A lighting device as claimed in claim 1, characterized in that the edges of the channels (20) situated opposite the upper side (203) are surrounded by a third reflecting layer (205).

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13. A liquid crystal display with a lighting device as claimed in any one of the preceding claims.

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